



## Effects of Flipped Classroom Approach on EFL Learners' Reading Performance with Different Cognitive Style

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### Abstract

This study attempted to examine the effect of the flipped classroom approach on EFL learners' reading comprehension with respect to learners' cognitive styles (impulsive & reflective). To this end 80 EFL learners based on PET exam selected for the study and based on their cognitive style assigned in to control and experimental groups. The kind of homework and teaching materials undertaken in experimental groups were similar in control groups as well. The instruction in the control groups was follow traditional way of (non-lipped) reading instruction while the participants of experimental groups were exposed to flipped instruction. The data obtained from reading comprehension tests were analyzed using the statistical package or social sciences version 16 (SPSS, 16). The scores of participants in all control and experimental groups were analyzed using a two way ANOVA. The obtained results revealed that students' cognitive style does not have any effect on learners' benefit of flipped method and all the learners in experimental groups enjoy the method and outperformed learners in control group.

**Keywords:** flipped classroom, reading comprehension, cognitive style

### INTRODUCTION

Shaywitz (2003), points out reading process is the royal road to knowledge, it is essential to the success in all academic subjects. Furthermore, he states that reading comprehension is an important life skill and it is one of the most important domains in education, because it is the best predictor of success in higher education and job performance. Reading can be challenging, particularly when the material is unfamiliar, technical, or more complex. It is the common experience of EFL teachers that, most students fail to learn to read efficiently and adequately in the target language. Many

students fail to conceptualize reading as a search for meaning, so they have a lot of problems during the study. They can read variety of texts with accuracy and fluency but cannot demonstrate an understanding of what they have read. This is often indicated by an inability to recall key information from the text, to retell the story or answer questions related to it. Students with reading problems tend to be less aware of text structure and have poorer recall of textual ideas than good readers (Fitzgerald, 2003). It is very important that the reader is aware that the purpose of reading is to make meaning of the text being read, not just be able to decode it (Hedin & Conderman, 2010). Furthermore, Stanley (1984) claimed that, one of the L2 readers' problems is that they may view texts as samples of language rather than information and he claimed that L2 readers studied the text less efficiently than L1 readers. Even when students read a text at a basic level, the level of comprehension is typically shallow and lacks the necessary depth for adequate understanding (Best et al., 2005). Other research has confirmed the assumption that students rarely use reading strategies to help them comprehend the existing text (Garner, 1990; Pressley & Ghatala, 1990; Rothkopf, 1988) and when they do use strategies, students often apply rudimentary and ineffective methods, such as repetition (Garner, 1990). Therefore, the students may need help in achieving global understanding of the text.

The “flipped classroom” is a type of blended learning approach where the onus of learning and mastering content falls back to students. For these approaches, the teacher’s role has gone through a metamorphosis – from being the “sage on the stage” to the “guide by the side”, and classrooms are changing as well, from the traditional and passive teacher – centered learning environment to an active student- centered one with the teachers assuming the role of facilitators. The underlying idea and approach of delivering flipped content includes developing a pre- recorded video encompassing the fundamental theoretical concepts of a particular lesson, which the students can watch outside of classroom time at their leisure to gain some idea about the topic covered in next lecture (Bishop et al., 2013). This helps the instructor by freeing up classroom time, which may be used for active learning activities such as in- class discussions, answering questions and group activities.

There is a significant knowledge gap in terms of acceptability and adaptability of the flipped classroom concept among students. This study helps to fill this gap. In fact, there is a need to investigate effects of flipped classroom approach and EFL learners’ cognitive style on their reading comprehension performance in order to help them learn and use their foreign language appropriately if we are to pave the way of FLA practically and successfully. Familiarity with flipped approach and their impact on one’s reading comprehension development can be worth conducting research and its results might help both EFL teachers and the learners to develop a more fruitful teaching/learning scene.

## RESEARCH QUESTIONS

The present study attempted to answer the following research questions:

1. Does flipped classroom method have any significant effect on EFL learners' reading comprehension?
2. If the answer to the research question 1 is yes, which of the learners benefit more (impulsive learners or reflective learners)?

## Research Hypotheses

Based on the above questions, the following hypotheses were developed:

- H2. Flipped classroom method has significant effect on EFL learners' reading comprehension.
- H2. Flipped classroom method has more effect on reading comprehension of impulsive learners than reflective learners.

## METHOD

### Design

The present study employs a two-way factorial design as it attempts to examine how variables interact in the effect they have on the dependent variable. It is intended to estimate the effects of two independent variables, i.e., flipped - classroom approach and EFL learners' cognitive style on the dependent variable reading comprehension performance.

### Participants

For the purpose of the study based on a Nelson proficiency test 80 participants among 250 learners were selected and based on their personality type were assigned in to two experimental (group one: 25 extroverts & group two: 25 introverts) and one control groups (30 introvert and extrovert learners) Experimental groups received flipped classroom method and control group did not receive any specific method. In the treatment phase, to the best effort of the researcher, the only difference was the flipped method to experimental groups, while the control group had not such a treatment.

### Instrumentation

The following sections give the detailed explanations of the instruments which were used in this study.

#### *Nelson Proficiency Test*

A Nelson 150D English proficiency test was administered to ensure the homogeneity of the subjects. It consisted of 50 multiple choice items of knowledge of English structures. The time allotted to take this test was 50 minutes and the scoring was estimated out of

50. Additionally, to estimate whether these learners were homogeneous regarding their proficiency level, a One-way ANOVA was run.

### ***Nelson's Reading Comprehension Test (pre-test)***

The next instrument was a Nelson's reading proficiency test (Brown, Fishco, & Hanna 1993). This test consisted of 30 multiple choice items in which five passages is used. Learners had to answer the questions in 45 minutes.

### ***Post-test***

A teacher-made reading comprehension test selected from *Developing Skills* book was given to the three groups to measure their reading comprehension ability after the treatment sessions. Before giving the reading comprehension test to the selected groups, it was given to the pilot students to calculate its reliability. The content validity of this test is confirmed by a panel of experts at Ph.D. level in the institute.

## **Questionnaire**

### ***Cognitive Style questionnaire***

The second instrument was a Persian version of Impulsivity Subscale of Barrett's (1995) Impulsiveness Questionnaire to divide the participants into two groups of Impulsive and Reflective. The Barratt Impulsiveness Scale, Version 11 (BIS-11) is a 30-item self-report questionnaire designed to assess general impulsiveness taking into account the multi-factorial nature of the construct. The structure of the instrument allows for the assessment of six first-order factors (attention, motor, self-control, cognitive complexity, perseverance, cognitive instability) and three second-order factors (attentional impulsiveness [attention and cognitive instability], motor impulsiveness [motor and perseverance], non-planning impulsiveness [self-control and cognitive complexity]). A total score is obtained by summing the first or second-order factors. The items are scored on a four-point scale (Rarely/Never [1], occasionally [2], Often [3], Almost Always/Always [4]). The internal reliability of the items of this questionnaire is 0.77.

## **Data collection procedures**

The entire study will take 9 weeks. The total sessions of the study were 13 sessions (two days a week). The learners received three hours of English language instruction in two sessions 2 days a week (90 minutes per session). The researcher herself was the teacher of three groups of the participants. One session was devoted to proficiency test (Nelson proficiency Test), one to cognitive style questionnaire, one to pre-test, and one to post-test. The homogeneity test was administered in the first session. Then in order to collect information about learners' cognitive style the related questionnaire was distributed among the students before the pre-test. This questionnaire was used in order to finding out learners' cognitive style (impulsive or reflective).

The pre-test was administered in the third session and all participants received Nelson reading test. Finally, in the last session the post-test was administered (teacher-made reading comprehension test) with 10-session distance to find out the effects of flipped classroom over time. Therefore, the total sessions devoted to the treatment were 10 sessions. Treatment sessions started from forth session of the study. The Selected *Reading book* was worked on in all three groups. Treatments of the groups started from the fourth session through ten sessions, two 90-minute sessions a week.

The kind of homework and teaching material undertaken in experimental groups was similar in control group as well. The instruction in the control group followed traditional way of (non- flipped) reading instruction, while the participants of experimental groups were exposed to flipped – classroom instruction which were, first and foremost, familiarize them with flipped – classroom approach , secondly, engaging students with learning prior to attending class, ensuring that they fully prepared for their class. The video teaching was 10 minutes or more. All the students were encourage viewing the video prior to the lecture so that they can do some reading research on their own and come to class with questions that may be discussed during lecture time. Students learning were obvious from students’ active participation and response to teachers’ questions during the actual lecture. A part of the ensuring lecture time was devoted to group activities and brainstorming, which are hallmarks of the flipped concept.

## DATA ANALYSIS AND RESULTS

Before discussing the main results of two-way ANOVA, it should be mentioned that the groups enjoyed homogeneous variances (Levene’s  $F=1.46$ ,  $Sig> 0.05$ ). Table 1 shows the result.

**Table 1.** Test of Homogeneity of Variances for Scores on Post-test

F	df1	df2	Sig.
1.463	5	54	.217

As there are two independent variables, namely type of flipped method and cognitive style, the present data analysis utilized a two-way ANOVA to explore the impact of cognitive style and type of flipped on learners’ reading comprehension. As can be seen in Table 2 there was a statistically significant main effect for groups ( $p=0.000 < 0.05$ ). Using Cohen’s (1988) criterion, the effect size for this difference (partial eta squared =.562) can be considered as large. These results suggest that flipped method had a significant effect on students’ reading comprehension, so the first hypothesis was confirmed.

As shown in Table 2 the p-value of cognitive style was higher than 0.05 ( $.50>.05$ ). It indicates the fact that there was no significant main effect for cognitive style and it had not a significant effect on students’ reading comprehension. Therefore, the second hypothesis stating that was rejected. The interaction effect between cognitive style and reading comprehension was not statistically significant either ( $.65>.05$ ). This indicates

that there was no significant difference in the effect of flipped method on reading comprehension of learners with different cognitive styles and impulsive learners does not outperform reflective when using flipped method.

**Table 2.** Two-way ANOVA for Scores on Post-test

Source	SS	Df	Mean Square	F	Sig.	Partial Eta Squared
Group	26.585	2	13.293	34.656	.000***	.562
Cognitive style	.171	1	.171	.445	.508	.008
Group*cognitive	.329	2	.165	.429	.653	.016
Flipped method	20.712	54	.384			
Total	16369.600	60				

A Post-hoc multiple comparisons was run to examine the differences between the three groups statistically and to pin down where the differences exactly lie, as shown in Table 3. The results obtained from these comparisons indicated that the mean score for IG (M=17.60) was significantly different from both RG (M=17.25) and CG (M=15.20).

**Table 3.** Post-Hoc Tests (Multiple Comparisons) of the Three Groups for Post-tests

Group	Mean Difference	Std. Error	Sig.	95% Confidence Interval		
				Lower Bound	Upper Bound	
IG	EG	-.2500	.19585	.009	-1.1220	-.1780
	CG	.9700*	.19585	.000	.4980	1.4420
RG	CG	1.6200*	.19585	.000	1.1480	2.0920
	IG	-.2500	.19585	.009	.1780	1.1220
CG	IG	-1.6200*	.19585	.000	-2.0920	-1.1480
	EG	-.9700*	.19585	.000	-1.4420	-.4980

## CONCLUSION

The main finding of this study is that the use of the flipped teaching strategy indeed has the potential to help teachers to improve their learning outcomes in the technology integration course. This benefit demonstrated by the statistically significant differences in learning outcomes between students taught by flipped and lecture-based teaching strategies, with the highest scores achieved by students in the flipped condition and the least was in the lecture-based condition. The results of the present study support previous findings produced in the context of other content areas and with different population and provide empirical evidence that validates the flipped teaching strategy to improve students' learning outcomes (Sadaghiani, 2012; Sparks, 2013; Walker, 2011).

Another significant finding of this study is that students' cognitive style does not any effect on learners' benefit of flipped method and all the learners in experimental groups enjoy the method and outperformed learners in control group.

At all if regular instruction of flipped strategy will be provided and if learners consciously be aware of their own learning, learning will be dramatically enhanced. This

way, teachers can have a stronger effect on the learning process. But it should be kept in mind that sheer presentation of these strategy instructions is not enough. What is needed, in addition to instruction, is that teachers should routinely conduct research in their own classroom to better understand the nature of these learning strategies. Teachers' awareness of the role and importance of these strategies, as well as the right application of them to the right task is also of great value. It requires the teacher a full-commitment to their jobs not as an authority of the classroom, but as a facilitator. In an effort to create life-long learners, rather than students that will simply memorize and regurgitate information, teachers will begin to teach skills of learning rather than simply disseminating content.

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